the intracranial volume and prevent the formation of dead space between dura and cranium.

Of Ketchum's series in roughly a third of the patients no complications occurred, in another third there were minor complications and in the remaining third there were major life-threatening complications requiring intensive care and prolonged hospital stays. Most of the major complications occurred in patients who had received preoperative radiation treatment. This is similar to our own experience. Remembering that malignant lesions and benign tumors such as nasopharyngeal angiofibromas with intracranial extension were considered by many to be unresectable and for the most part incurable, this high complication rate appears justifiable.

Our experience with excision of tumors such as angiofibromas, esthesioneuroblastoma and carcinoma of the maxillary and ethmoid sinuses supports this concept of combined intracranial-transfacial excision.

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Immunity in Head and Neck Malignancy

Prognosis

ALTHOUGH NOTED in epidermoid cancers at other sites (for example, breast, colon and lung) the correlation between impaired nonspecific immune response and survival is nowhere stronger than in tumors of the upper aerodigestive system. The ability to show topical sensitization to 2, 4 dinitrochlorobenzene (DNCB) on secondary challenge has proved thus far the most popular and reliable *in vivo* assessment of the integrity of T-lymphocyte (cellular immune) function, thought to bear the major responsibility for tumor immune response. Eilber, Morton and Ketcham, for example, investigated 120 patients with a broad spectrum of head and neck malignancy. Of patients with localized and operable disease, 64 percent were DNCB reactive; 89 percent of these patients remained free of disease at six months irrespective of treatment. On the other hand, 85 percent of patients with locally advanced or disseminated disease were nonreactive to initial sensitization; only one of this group was alive one year later. Furthermore, posttreatment testing showed that a continued positive, or conversion from negative to positive, response was associated with tumor control in all cases.

Therapy

Unlike assessment of prognosis, immunotherapy in head and neck epidermoid cancer has not yet been widely initiated. However, several important theoretical principles already have emerged from pilot clinical and laboratory investigations. First, the maximum response capacity of a healthy, unaided immune system will destroy between 100 million and 1 billion cells, a tumor load only approaching detectability by conventional means. Second, the immune response destroys all cells within its capacity, unlike radiation or chemotherapy—both of which effect only those cells which are cytokinetically or biochemically vulnerable. Finally, the immune response is thought to be ubiquitously effective, so that targeted cells residual at the primary site, in regional lymphatics or distant in the viscera are equally subject to destruction. All of these considerations lead one to conclude that the first application of immunotherapy to malignancies of the head and neck will be in conjunction with contemporary modalities when tumor load is lowest.

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Additional Help for the Hearing Impaired

ADVANCES IN hearing aid design as well as new techniques and philosophy in hearing aid fittings have increased the number of patients who can benefit from amplification.

A patient with a high frequency loss, even when the hearing below 2000 Hz is normal or near normal, may have a great deal of difficulty in noisy situations and in distinguishing between